

GFA AIRWORTHINESS DIRECTIVE

TYPE AFFECTED: DG-400 all Serial Numbers.

SUBJECT: a: Modification of the starter motor mount and b: The engine support brackets. c: Failure of fuel lines.

BACKGROUND: Vibration damage has occurred to the engine. The rubber fuel lines attached to the engine have proven to be subject to failure because of exposure to heat.

Note: The manual amendments required by Technical Note 826/22 have been incorporated in the manuals reissued under GFA AD 401.

Because Technical Notes 826/22 and 826/25 were issued a long time ago it is possible these modifications have already been incorporated. In that case all that is required is a log book entry confirming that the requirements of this AD have been complied with.

The requirements in TN 826/22 with regard to the propeller support blocks 4M5 are superseded by the requirements of TN 826/25.

Issue 2: In Issue 1 of this AD there was a requirement to modify the propeller shaft however further experience has shown that even the modified shaft may fail. The shaft must therefore be replaced under GFA AD 467 and the requirement to modify the shaft has been removed from this AD.

DOCUMENTATION: Glaser-Dirks Technical Note 826/22, Work Instructions No. 1, 2 and 3 for TN 826/22, Rotax Technical Bulletin 505-04 pages 3 to 5, Technical Note 826/25, Work Instruction No. 1 for TN 826/25, drawing 4M31 and Sketch 1 all of which form part of this AD.

ACTION REQUIRED: 1. At the next Annual Inspection after 1 May, 1996 the modifications to the starter motor and to the forward engine mount 4M6 must be completed in accordance with the procedures in Technical Note 826/22 and its appropriate work instruction.

2. DELETED

SIGNED:

CHIEF TECHNICAL OFFICER AIRWORTHINESS

For and on behalf of:

THE GLIDING FEDERATION
OF AUSTRALIA

GFA AD 453	ISSUE: 2	26 August, 1996	Page 2 of 19
-------------------	-----------------	------------------------	---------------------

3. At the next Annual inspection after 1 May, 1996 the rear propeller mounts must be modified in accordance with instruction 2 in Technical Note 826/25.

4. If the fuel lines at the engine (see section 3.4.3 a of the Maintenance Manual issued under GFA AD 401) are older than 3 year then they must be replaced at the next Annual Inspection after 1 May, 1996.

5. After all modifications have been completed the ignition timing must be checked in accordance with Instruction 4 of TN 826/22.

WEIGHT AND BALANCE: Not affected.

IMPLEMENTATION: All requirements of this AD must be completed by persons rated for Annual Inspections of the DG-400.

COMPLIANCE: The requirements of this GFA Airworthiness Directive are mandatory. This Directive is issued pursuant to the Rules and Regulations of the Gliding Federation of Australia.

Glaser-Dirks Flugzeugbau GmbH
Im Schöllengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb BA 279

Technical note
Nr. 826/22

Page 1 from 2

SUBJECT : Powerplant DG-400

EFFECTIVITY : DG-400 all serial no.'s up to 4-249.
Instruction 3 only DG-400 serial no. 4-151
up to 4-249 and all DG-400's where the starter motor was exchanged for the new type Bosch American E-Starter 992807.

ACCOMPLISHMENT : Instruction 1 with the daily inspection.
Instructions 2 - 5 as soon as possible, but at latest at the next 25 h inspection.

REASON : Vibration damage occurred on some DG-400's.
Our investigations resulted in the modifications which shall be executed with this technical note. One major reason for damage was that the engine manufacturer didn't drill the rear mounting holes for the propeller mount deep enough on some engines.

INSTRUCTIONS : 1. Inspection of the powerplant, see flight manual section 4.1 item 16, for tight fit of all parts, especially the rear mount of the upper part of the powerplant (propeller mount) and the mounting of the starter motor.
If you detect any defect it is prohibited to operate the engine before the defect is repaired.
If parts mentioned in the instructions 2-4 are concerned, instructions 2-5 have to be executed before you use the engine again.

2. Modifications see "Working Instruction No. 1 for TN 826/22".

3. Retrofitting of a holder for the starter motor "Bosch American E-Starter 992807" see "Working Instructions No. 2 for TN 826/22".

4. After execution of all modifications check the ignition timing see "Manual for Rotax engine type 505" section 8.7 and "Working Instruction No. 3 for TN 826/22". If the ignition timing is out of limits it is prohibited to operate the engine before the timing is corrected.
Correction of ignition timing see working instruction No. 3 item 2.

Glaser-Dirks Flugzeugbau GmbH
Im Schollengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb BA 279

Technical note
Nr. 826/22

Page 2 from 2

5. Exchange diagram 6 in the maintenance manual against the new issue January 1990 and amend page 0.2 to the maintenance manual.

MATERIAL

: For all DG-400's ser. no. 4-1 up to 4-249
Working instructions no. 1, 2, 3 for
TN 826/22
maintenance manual page 0.2
diagram 6.

2 washers 4 M 31/2
2 bolts M 12 x 30 DIN 7984-8.8
2 bolts M 8 x 22 DIN 912-8.8
1 piece of rubber 70 x 45 x 2 mm
2 selflocking nuts M 10 SSN 003

- - -
in addition for DG-400 serial no. 4-151
up to 4-249 and all DG-400's where the
starter motor was exchanged to the new
type Bosch American E-Starter 992807

2 distance washers 8 x 14 x 0.3
1 starter mounting 4 M 70
1 screw Taptite 1/4-20 UNCX 3/4
1 spring washer 6.4 DIN 6798 I
1 nut STD 1411

WEIGHT AND BALANCE: Influence negligible.

REMENTS

: Instruction 1 may be executed by the owner himself.
Instructions no. 2 - 5 are to be executed by the manufacturer or by a licensed workshop and to be inspected and entered in the aircraft logs by a licensed inspector mentioning TN 826/22.

Bruchsal 4, January 10, 1990

Author: W. Dirks

W. O. M.

LBA - approved:

The German original of this TN
has been approved by the LBA
under the date of 25. Jan. 1990

The translation into English
has been done by best knowledge
and judgement. In any case of
doubt the German original is
authoritative.

Glaser-Dirks Flugzeugbau GmbH
Im Schollengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb MA 279

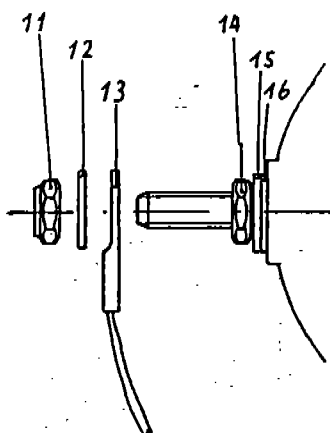
Page 1
Working Instruction no. 1
for TN 826/22
Instruction 2

Concerning: all DG-400 up to ser.no. 4-249.

Numbering of parts see drawing 1 for this working instruction and the sketches in this instruction.

1. Extend the engine, then switch off main switch.
2. Disconnect the positive wire from the starter motor.

a) Bosch Starter type DG



11. self locking nut DIN 985 - 8 zn
12. washer 6.4 DIN 125 St zn
13. positive wire
14. nut M 6 DIN 936 - 8 zn
15. spring washer 6.4 DIN 6798I
16. washer material brass

When screwing off the nut (11) hold the nut (14) with a 10 mm fork end spanner.

b) Bosch American-E-Starter

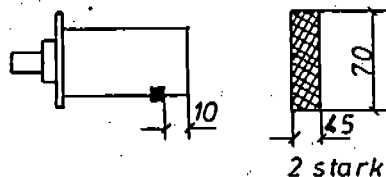
With this type of starter motor the nut 14 is not existing. The nut 11 is a nut STD 1411 (1/4 inch thread), spanner must be 11 mm (7/16 inch).

3. Dismount the carburettor cover, therefore remove the 2 screws (10). Secure the carburettor intake from dirt etc.
4. Dismount securing bolt (1).
5. Dismount slotted nut (2) and spring washer 4 M 27 and the ring (3).
6. Dismount the spring at the exhaust manifold.
7. Dismount the lower mounting bolts (4) of the rear propeller-mounting plate 4 M 3.
8. Take off rear propeller mounting plate 4 M 3 with the exhaust muffler.
It is not necessary to dismount the muffler from the plate 4 M 3. You need only to bend forward the front propeller mounting plate 4 M 2.

Glaser-Dirks Flugzeugbau GmbH
 Im Schotengarten 19-20, 7520 Bruchsal 4
 Telefon 07257/89-0, Telex 7822410 GLDG
 LBA anerkannter Herstellungsbetrieb IB 25
 LBA anerkannter Luftfahrttechnischer Betrieb MA 279

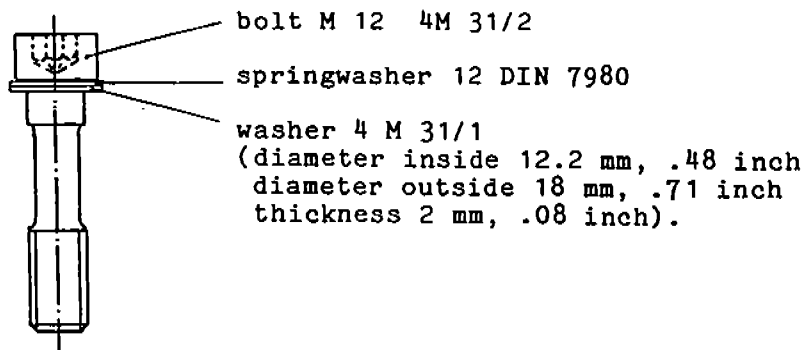
Page 2
 Working Instruction no. 1
 for TN 826/22
 Instruction 2

-
9. Dismount the front and the rear mounting bolts of the starter motor (5) and (6).
 Take off the starter motor.
 During reassembly the modification item 14 must be executed.
 10. Dismount rear mounting blocks 4 M 5, therefore remove the bolts 4 M 31/1.
 During reassembly the modification item 13 must be executed.
 11. Degrease the lower side of the starter motor and glue on the rubberplate 70 x 45 x 3 mm (2.75 x 1.77 x 0.8 inch).



12. Prior to reassembly clean all parts with acetone and remove remnants of loctite from all threads.
 During reassembly secure all screwed connections with Loctite 72 b except for securing bolt (1), slotted nut (2) and bolts (7).
 All bolts secured with Loctite should be marked with red securing paint.
13. Mount the blocks 4 M 5 into the engine. Therefore recut the the threads in the engine and check the contact surface between engine and 4 M 5 for evenness.
 Before reassembling inspect the bolt 4 M 31/1 for cracks.

Modification: Place a washer 4 M 31/2 underneath the the springwasher.



Glaser-Dirks Flugzeugbau GmbH
Im Schallengarten 19-20, 7520 Bruchsal 4
Telefon 07257/69-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb IIA 279

Page 3
Working Instruction no. 1
for TN 826/22
Instruction 2

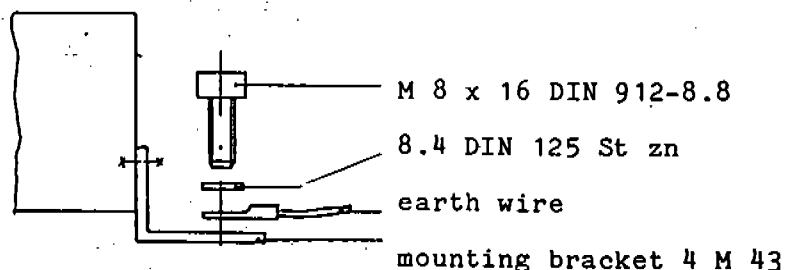
14. Mounting of the starter motor: Bosch type DG

Note: With starter motor Bosch American E-Starter execute the "working instruction no. 2 for TN 826/22" instead of this section.

Modification: Replace the two mounting bolts (6) M 8 x 25 DIN 912-8.8 by M 8 x 22 DIN 912-8.8

Mount starter motor with bolts (5) and (6) and a washer 8.4 DIN 125 St under each bolt head.

With bolt (5) the earth wire has also to be fixed.



15. Mount the rear propeller mounting plate 4 M 3 with the exhaust muffler. Place the muffler into the exhaust manifold. Position the plate 4 M 3 correctly and fix it with the bolts (4) to the blocks 4 M 5. Place a washer 10.5 DIN 125 underneath the bolt heads. Fix the spring from muffler to manifold. Mount the part 4 M 1/2 (3), springwasher 4 M 27 and slotted nut (2). Further work see section 4.1 maintenance manual "Mounting and tensioning of the drive belt".
16. Mount the carburettor cover again to parts 4 M 4 and 4 M 5 with the bolts (10) and washers 5.3 DIN 125.
17. Exchange the mounting bolts at the front engine mount 4 M 6. **Don't execute this work on both sides at the same time!**
- a) Dismount nut and washer from bolt (7). Push bolt as far inside the rubber mounting block (9) as to make it flush with block (8).
 - b) Screw out bolt (9) of plate 4 M 6. Clean the threads.

Glaser-Dirks Flugzeugbau GmbH
 Im Schollengarten 19-20, 7520 Bruchsal 4
 Telefon 07257/89-0, Telex 7822410 GLDG
 LBA anerkannter Herstellungsbetrieb 1B 25
 LBA anerkannter Luftfahrttechnischer Betrieb 1A 279

Page 4
 Working Instruction no. 1
 for TN 826/22
 Instruction 2

c) Replace bolt (9) M 12 x 30 DIN 912-8.8 by a
 bolt M 12 x 30 DIN 7984-8.8 (low head).
 Screw the new bolt with washers 13 DIN 125 into the front
 mounting plate 4 M 6.

d) Push back the bolt (7) into place, attach washer
 10.5 DIN 125 to the bolt and screw a new selflocking
 nut M 10 SSN 003 onto the bolt.

Now execute the same modification on the other side.

18. Connect positive wire to the starter motor.

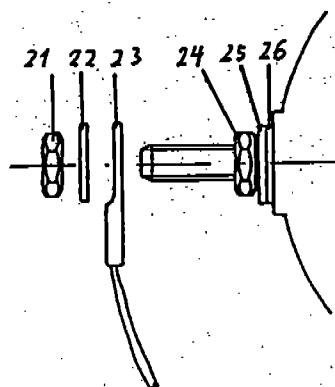
a) Bosch starter type DG

See sketch under item 2.

Fix nut (14) on the bolt protruding out of the starter. Put
 on positive wire, washer (12) and screw on nut (11).

b) Bosch American E-Starter

Modification:



21. Nut STD 1411

22. Springwasher 6.4 DIN 6798 I

23. Positive wire

24. Nut STD 1411

25. Springwasher 6.4 DIN 6798 I

26. Brass washer

Fix nut (24) on to the bolt protruding out of the starter.
 Put on positive wire (23) and springwasher (22) and screw
 on nut (21). Use an open end spanner 11 mm (7/16 inch).

Tightening torques

M 12-----50 Nm (37 ft lb)
 M 10-----40 Nm (30 ft lb)
 M 8-----24 Nm (18 ft lb)
 M 6-----10 Nm (7.5 ft lb)

Securing

Secure all screwed connections with Loctite 72 b except for those
 secured by selflocking nuts. All bolts secured with Loctite are to
 be marked with red securing paint.

Glaser-Dirks Flugzeugbau GmbH
Im Schöllengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb IIA 279

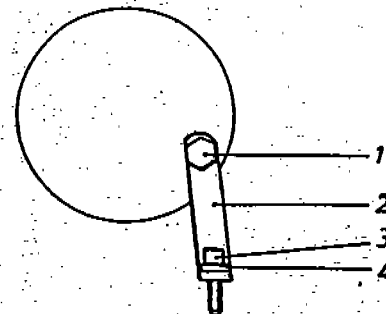
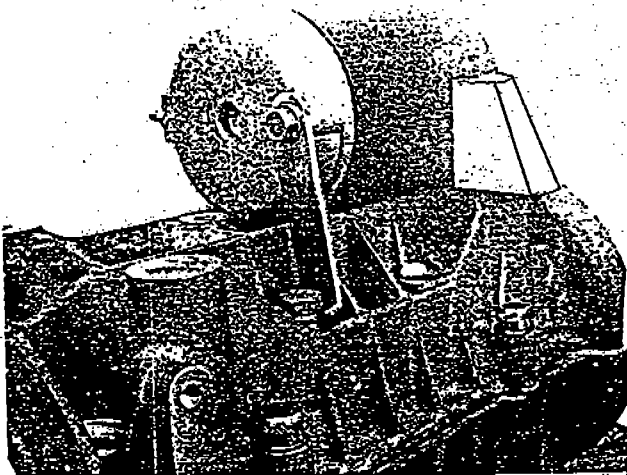
Page 1
Working Instruction no. 2
for TN 826/22
Instruction 3

Concerning only DG-400 serial no. 4-151 up to 4-249 and all DG-400's where the starter motor was exchanged for the new type Bosch American E-Starter 992807.

All items of the "working instruction no. 1 for TN 826/22" except for item 14 have to be executed.

This instruction replaces item 14 of working instruction no. 1.

1. Retrofit of a holder for the starter motor



sketch 1

1. Tapetite screw 1/4 - 20UNCX 3/4
2. Holder 4 M 70
3. Bolt M 8 x 16 DIN 933-8.8
4. Springwasher 8 DIN 127

Remove bolt (3) and springwasher (4) from the engine (see photo). Fix the holder 4 M 70 to the starter motor with screw (1) (see sketch 1). This screw cuts the thread into the hole of the starter motor.

Glaser-Dirks Flugzeugbau GmbH
Im Schöngarten 18-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb BA 279

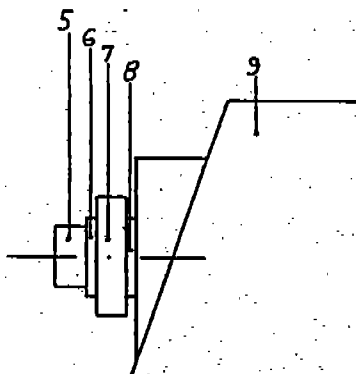
Page 2
Working Instruction no. 2
for TN 826/22
Instruction 3

2. Modification at the rear mounting:

- Replace the two mounting bolts M 8 x 25 DIN 912-8.8 by bolts M 8 x 22 DIN 912-8.8.
- Place a distance washer 8.4 DIN 522
(inside diameter 8.4 mm - 0.33 inch)
(outside diameter 14 mm - 0.56 inch)
(thickness 0.3 mm - 0.01 inch)
in the cutout of the starter motor flange.

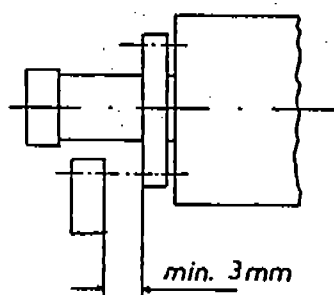
Mount starter according to sketch 2 to the blocks 4 M 5.

Sketch 2



- 5. Bolt M 8 x 22 DIN 912
- 6. Washer 8.4 DIN 125
- 7. Starter motor flange
- 8. Distance washer 8 x 14 x 0.3
- 9. Mounting blocks 4 M 5

- 3. Fix the holder 4 M 20 with bolt (3) to the engine according to sketch 1, don't use Loctite.
- 4. Check if a free play of min. 3 mm (.12 inch) is between starter motor pinion and starter gear.



Glaser-Dirks Flugzeugbau GmbH
Im Schollengarten 19-20, 7520 Bluchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb IIA 279

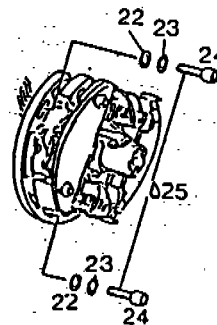
Page 1
Working Instruction no. 3
for TN 826/22
Instruction 4

Checking the ignition timing

1. Checking must be executed with warm engine.
The ignition timing mark at the starter gear should be cleaned and marked with chalk.
The checking of the timing should be done according to the manual for Rotax engine type 505, page 11, section 8.7.

Note: The clamp of the ignition stroboscope lamp has to be clamped to a cleaned ignition wire. The pointer on the clamp must point towards the spark plug.

2. If the ignition timing is out of limits for correction the armature plate must be turned.
This should be done with the starter gear still assembled to the engine.
Via the openings in the magneto housing loosen the screws (24) which hold the armature plate (4mm allen key wrench).
After turning the armature plate fix the bolts and check the ignition timing again.



Repeat this procedure until the timing is correct.

3. When the timing is correct the screws (24) have to be secured with Loctite 72 b.
Therefore you must remove the magnetic flywheel assembly according to the instructions of Rotax technical bulletin no. 505-04 page 3 - 5 (enclosed).
Check if the woodruff key between crankshaft and magneto housing is damaged (shear failure).
If this is the case, the woodruff key must be replaced (Rotax part no. 246050 or 3x3.7 DIN 6888) and the ignition timing must be checked and corrected again. You have to start again with item 1 of this instruction

Dismount one of the screws (24) secure it with Loctite and screw it in again. Then dismount and secure the second screw (24).

Assemble again the magneto flywheel assembly according to Rotax technical bulletin no. 505-04 page 3 - 5.



TECHNICAL BULLETIN

No. 505-04

Page 3 of 5

Instructions for the removal and refitting of magneto
flywheel ass'y and exchange of starter gear

1) Disassembly:

- 1.1. If coverplate fitted, remove it (ill. 1).
Re-use not forseen.

Tool: Socket spanner 13 A/F

- 1.2. Fasten flywheel fixture with three hex. HD. screws M8 x 16
to flywheel (ill. 2).

Tool: Flywheel-fixture 876 080
socket spanner 13 A/F

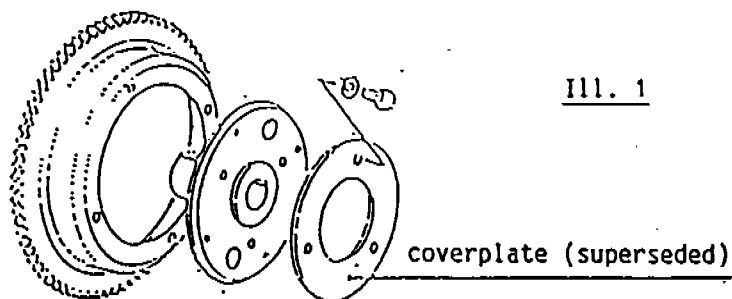
- 1.3. Remove hex. nut M22 x 1,5 from crankshaft (ill. 5).

Tool: Socket 30 A/F on torque wrench or on suitable extension

- 1.4. Place protection cap or mushroom-like protector on crankshaft
end, fasten puller to flywheel fixture and pull off flywheel.

Tool: Protector 876 557
puller 876 065
open end or socket spanner 22 A/F

Advice: If need be, break bond of flywheel to crankshaft taper
by carefully heating up to 120°C.



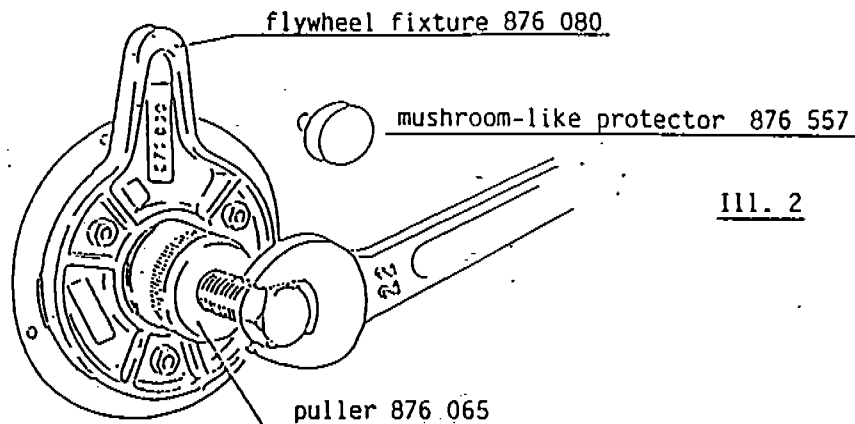
Ill. 1



TECHNICAL BULLETIN

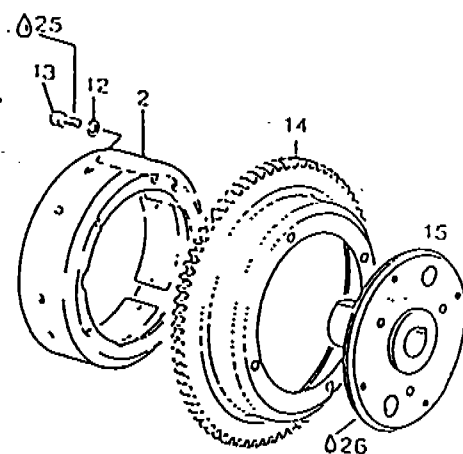
No. 505-04

Page 4 of 5

2) Exchange of the starter gear

2.1. Strip flywheel assembly to its components of magneto housing item 15, starter gear item 14 and magneto ring item 2 after removal of the four allen screws M6 x 11,5 item 13. Clean mating surfaces, remove Loctite residues.

2.2. Fit new starter gear 995 956, apply Loctite to mating surfaces, tighten screws M6 with 10 Nm.



item	part no.	designation
2	993 500	magneto ring
12	945 751	lockwasher A6 DIN 123
13	840 370	allen screw M6 x 11,5
14	935 956	starter gear 77 t
15	865 638	magneto housing
25	899 785	Loctite 221
26	899 788	Loctite 648



TECHNICAL BULLETIN

No. 505-04

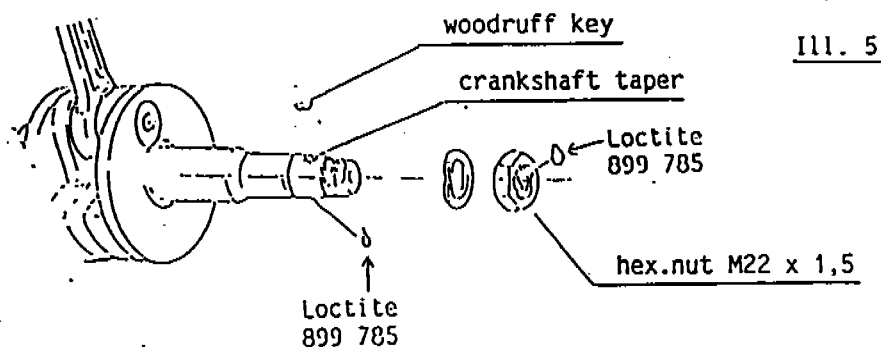
Page 5 of 5

3) Refitting of flywheel assembly:

- 3.1. Degrease taper of crankshaft and magneto housing with suitable degreasing agent.
- 3.2. Insert woodruff key (ill. 5).
- 3.3. Apply Loctite 221, 899 785, on crankshaft taper.
- 3.4. Fit flywheel assembly on crankshaft.

Important: Make sure that armature plate ass'y and flywheel ass'y is clean and free of foreign matter.

- 3.5. Secure hex. nut M22 x 1,5 with Loctite 221, 899 785, tighten with 140 Nm.



- 4) Meet three hours curing time for Loctite, prior to engine start.

Glaser-Dirks Flugzeugbau GmbH
Im Schellengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb BA 272

Technical note
No. 826/25

Page 1 from 1

SUBJEKT : Powerplant DG-400

EFFECTIVITY : DG-400 from serial no. 4 -1 on

ACCOMPLISHMENT: as soon as possible preferable with the next 25h inspection but at latest 30. Oct.1991.

REASON : 1., 2. Vibration damage occurred on some DG-400's. Our investigations resulted in the modifications which shall be executed with this technical note
3. The rubber of the fuel hoses is subject to get tears due to the high temperatures at the engine. Therefore the replacement time of 5 years is too long and must be limited to max. 3 years.

INSTRUCTIONS : 1a) Dismount the propellershaft 4M24, inspect for cracks.
1b) If no cracks have been found, the shaft must be remachined by a qualified workshop licensed for this kind of metal work.
1c) If cracks have been found a new shaft must be installed.
2. Modification of screwed connection of rear propeller mounting plate.
For instructions 1 and 2 follow the working instruction no.1 for TN 826/25.
3. Exchange of the fuel hoses at the engine (see maintenance manuel DG-400 sect. 3.4.3 issued August 1991 TN 826/24) if the hoses are in service for more then 3 years.

MATERIAL : Working instruction no. 1 for TN 826/25
2 bolts 4M31/1
2 bushes 4M31/3
4 half-bushes 4M31/4
if necessary:
service kit fuel lines at the engine
1 propeller shaft 4M24

WEIGHT AND
BALANCE : /

REMARKS : Instructions are to be executed by the manufacturer or by a licensed workshop and to be inspected and entered in the aircraft logs by a licensed inspector.

Bruchsal 4, date Aug.2.1991

LBA - approved:

The German original of this TN has been approved by the LBA under the date of 91/08/12 and is signed by Mr. Fendt. The translation into English has been done by best knowledge and judgement. In any case of doubt the German original is authoritative.

Wilhelm Dirks

Author: Dipl.-Ing. W. Dirks

A. Lange

Type certification inspector: Dipl.-Ing. A. Lange

Glaser-Dirks Flugzeugbau GmbH
im Schollengarten 19-20, 7520 Bruchsal 4
Telefon 07257/89-0, Telefax 7822410 GLDG
LBA anerkannter Herstellungsbetrieb IB 25
LBA anerkannter Luftfahrttechnischer Betrieb BA 279

Working Instruction no.1
for TN 826/25

Numbering of parts see drawing 1 for TN 826/25.

1. Extend the engine, then switch off the main switch.
2. Dismount the carburettor cover, therefore remove the 2 screws (10). Protect the carburettor intake from dirt etc..
3. Remove propeller, toothed belt and propellershaft 4M24 according to maintenance manual sect. 4.1.1 - 4.1.3.
4. Remove the pulley from the propellershaft according to maintenance manual sect. 4.2.1 - 4.2.5.
The ball bearings may remain on the shaft.
- 5a) Execute an inspection for cracks of the propellershaft 4M24 at the intersection of the 40mm (1.57in) diameter shaft to the eccentric.
Crack-inspection must be done by a qualified person with a dye penetration method approved by MIL I-25135C e.g. MET-L-CHEK.
- b) If no cracks can be detected, the shaft can be remachined according to detail A on drawing 4M24 by a qualified workshop licensed for this kind of metal work
After remachining another inspection for cracks is necessary.
- c) If cracks are detected a new shaft must be installed.
6. Dismount the spring at the exhaust manifold.
7. Dismount the lower mounting bolts (4) of the rear propeller-mounting plate 4M3.
8. Take off rear propeller mounting plate 4M3 with the exhaust muffler.
It is not necessary to dismount the muffler from the plate 4M3. You need only to bend forward the front propeller mounting plate 4M2.
9. Dismount the front mounting bolt of the startermotor (5).
10. Remove rear mounting blocks 4M5 together with the starter motor, therefore remove the bolts 4M31/1, the washers 4M31/2 and the spring washers 12 DIN 7980. These parts will not be used for reassembly.
During reassembly the modification item 12 must be executed.
11. Prior to reassembly clean all parts with acetone and remove remains of Loctite from all threads. During reassembly secure all screwed connections with Loctite 72 b except for securing bolt (1) and slotted nut (2) .
All bolts secured with Loctite should be marked with red securing paint.

Glaser-Dirks Flugzeugbau GmbH
Im Schellengarten 19-20, 7520 Buchsal 4
Telefon 07257109-0, Telex 7822410 GLDG
LBA anerkannter Herstellungsbetrieb iB 25
LBA anerkannter Luftfahrzeughersteller iB 25

Working Instruction no.1
for TN 826/25

12. Mount the blocks 4M5 according to drawing 4M3 to the engine. Therefore recut the threads in the engine and check the contact surface between engine and 4M5 evenness. To prevent turning of the bushes 4M31/3 place thin sheet metal between the flat sides of the bushes and the startermotor. Remove these sheet metal plates after tightening 4M31/3. Make sure, that parts 4M5 and 4M31/3 don't touch the starter motor. The tightening torque for bolts 4M31/1 is increased to 70 Nm (52 ft lb). Tighten precisely to this value. After 10 minutes (Loctite not cured) tighten again with the same value.
13. Reassemble front starter motor mounting bolt.
14. Mount the rear propeller mounting plate 4M3 with the exhaust muffler. Place the muffler into the exhaust manifold. Position the plate 4M3 correctly and fix it with the bolts (4) to the blocks 4M5. Place a washer 10.5 DIN 125 underneath the bolt heads. Fix the spring from muffler to manifold. Install propellershaft with pulley. Mount the part 4M1/2 (3), springwasher 4M27 and slotted nut (2). Further work see section 4.1 maintenance manual "Mounting and tensioning of the drive belt".
15. Mount the carburettor cover again to part 4M4 and 4M5 with the bolts (10) and washers 5.3 DIN 125.

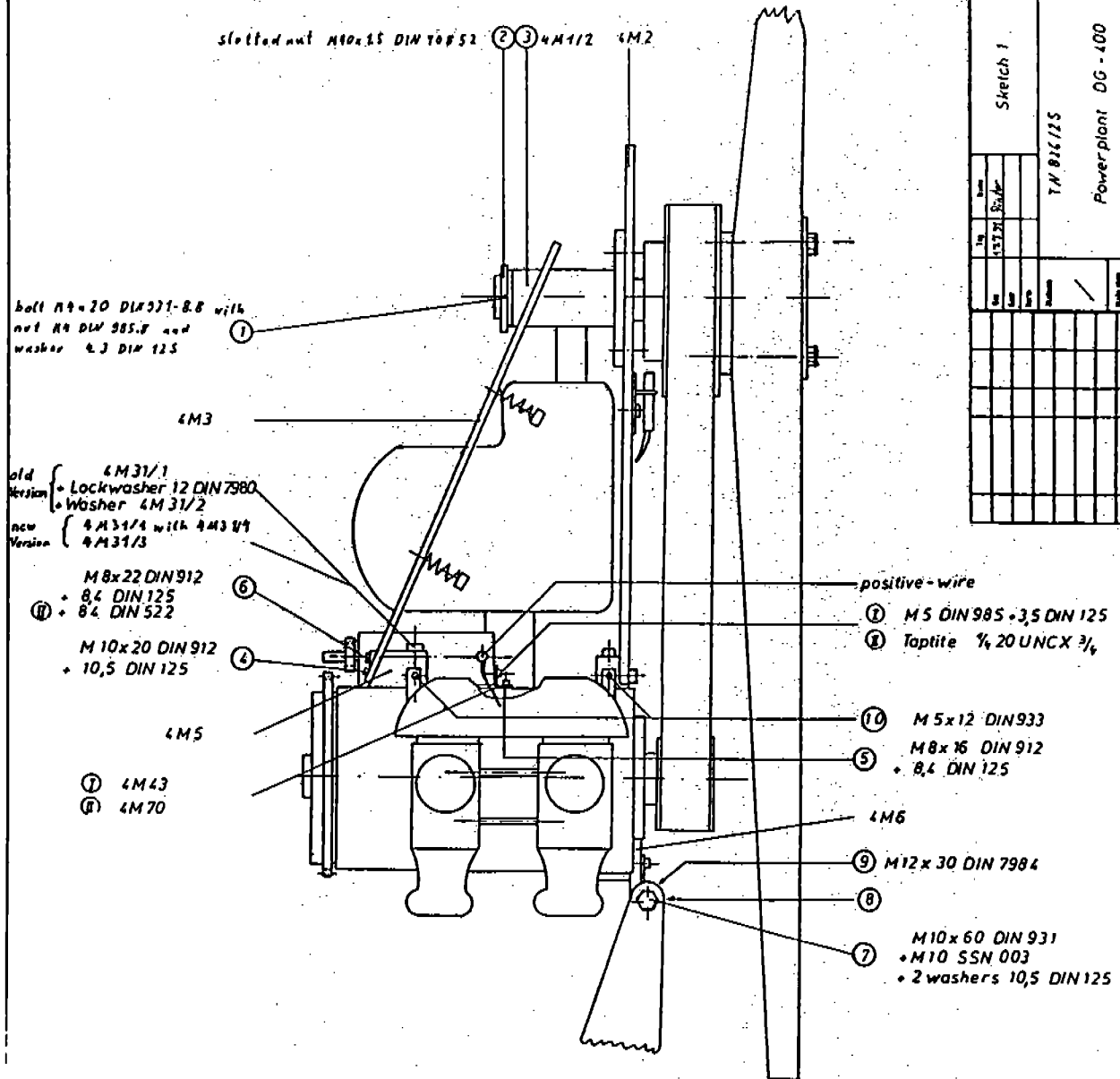
Tightening torques

M12 bolts 4M31/1	70 Nm (52 ft lb)
M12 -----	50 Nm (37 ft lb)
M10 -----	40 Nm (30 ft lb)
M 8 -----	24 Nm (18 ft lb)
M 6 -----	10 Nm (7,5 ft lb)

Securing

Secure all screwed connections with Loctite 72 b except for those secured by selflocking nuts. All bolts secured with Loctite are to be marked with red securing paint.

Enclosures: Drawing 4M24
Drawing 4M31
Drawing 1 for TN 826/25



① only for S.Nr. 4-1 up to 4-150

Ⓜ From S.Nr. 4-151 on

[illegible]

